

[SCOPE OF CLAIM FOR PATENT]

[Claim 1]

A data transmission system transmitting data, such as graphic image, document and so forth accumulated and constructed in a server equipment via a transmission path to a terminal unit and receiving and displaying in the terminal unit,

5

said server equipment comprising:

a communication control device for performing communication with said terminal unit using the transmission

10 path;

a user and terminal management device managing the terminal unit or user in communication;

a data content accumulating portion accumulating data to be displayed on the side of terminal unit;

15 a data name accumulating portion for accumulating data name necessary for selecting and taking out the data content;

a data management device for managing association between data content and data name; and

a data size converting device converting taken out data

20 into a designated data size,

said terminal unit comprising:

a communication control device for performing communication with said server equipment using the transmission path;

a data name selecting device for enabling user to select data content for displaying and executing; and

a data content displaying device displaying the data content of the data name selected by the data name selecting
5 device,

said server equipment transmitting to the terminal unit after conversion of quality of data content and data size adapting to a transmission speed of the transmission path in the server equipment.

10 [Claim 2]

A data transmission system as set forth in claim 1, wherein a relatively low speed transmission path, such as a telephone circuit, radio communication or the like is used as the transmission path.

15 [Claim 3]

A data transmission system as set forth in claim 1 or 2, wherein said server equipment has a data format converting device further converting the taken out data into a designated data format, and a terminal unit only having relatively low
20 speed processing performance, such as portable terminal or the like is used as said terminal unit.

[Claim 4]

A data transmission system as set forth in claim 3, wherein said server equipment has a data name conversion device enabling

selection of data name from the terminal unit by generating new data name by adding a particular identification information to the data name, upon demanding with the new data name from said terminal unit, the data content is transmitted to the terminal unit without converting the data quality, data size or data format.

[Claim 5]

A data transmission system as set forth in claim 3, wherein said server equipment has a user setting information management device capable of setting data size and data format per user or terminal unit and a user setting information accumulating portion accumulating setting information, for enabling display at a plurality of terminal units having different transmission speed or processing speed.

[Claim 6]

A data transmission system transmitting data, such as graphic image, document and so forth accumulated and constructed in a server equipment via a transmission path to a terminal unit and receiving and displaying in the terminal unit, said server equipment comprising:

a communication control device for performing communication with said terminal unit using the transmission path;

a user and terminal management device managing the

terminal unit or user in communication;

a data content accumulating portion accumulating data
to be displayed on the side of terminal unit;

a data name accumulating portion for accumulating data
5 name necessary for selecting and taking out the data content;

a data management device for managing association between
data content and data name; and

a data format converting device converting taken out data
into a designated data format,

10 said terminal unit comprising:

a communication control device for performing
communication with said server equipment using the transmission
path;

a data name selecting device for enabling user to select
15 data content for displaying and executing; and

a data content displaying device displaying the data
content of the data name selected by the data name selecting
device,

said server equipment transmitting to the terminal unit
20 after conversion of quality of data content and data size adapting
to a transmission speed of the transmission path in the server
equipment.

[Claim 7]

A data transmission system as set forth in claim 6, wherein

a terminal unit only having relatively low speed processing performance, such as portable terminal or the like is used as said terminal unit.

[Claim 8]

5 A data transmission system transmitting data, such as graphic image, document and so forth accumulated and constructed in a server equipment via a transmission path and a relay unit to a terminal unit and receiving and displaying in the terminal unit,

10 said server equipment comprising:

 a communication control device for performing communication with said terminal unit using the transmission path;

 a user and terminal management device managing the
15 terminal unit or user in communication;

 a data content accumulating portion accumulating data to be displayed on the side of terminal unit;

 a data name accumulating portion for accumulating data name necessary for selecting and taking out the data content;

20 a data management device for managing association between data content and data name; and

 said relay unit comprising:

 a communication control device for performing communication with both of said server equipment and said

terminal unit using the transmission path;

a data size converting device converting taken out data into a designated data size;

a data format converting device converting taken out data
5 into a designated data format;

a user setting information management device capable of setting data size and data format per user or the terminal unit;
and

a user setting information accumulating portion
10 accumulating set information,

said terminal unit comprising:

a communication control device for performing communication with said server equipment using the transmission path;

15 a data name selecting device for enabling user to select data content for displaying and executing; and

a data content displaying device displaying the data content of the data name selected by the data name selecting device,

20 said relay unit and said server equipment are connected with a relatively high speed transmission path and said relay unit transmitting to the terminal unit after conversion of quality of data content transmitted from said server equipment and data size adapting to a transmission speed of the transmission

path in the server equipment.

[Claim 9]

A data transmission system as set forth in claim 8, wherein
a plurality of server equipments are connected to the relay
5 unit via a relatively high speed transmission path.

[Claim 10]

A data transmission system as set forth in claim 8 or
9, wherein a relatively low speed transmission path, such as
a telephone circuit, radio communication or the like is used
10 as the transmission path.

[Claim 11]

A data transmission system as set forth in any one of
claims 8 to 10, wherein a terminal unit only having relatively
low speed processing performance, such as portable terminal
15 or the like is used as said terminal unit.

[DETAILED DESCRIPTION OF THE INVENTION]

[0001]

[Field of Industrial Application]

The present invention relates to a data transmission
20 system for transmitting data, such as graphic image, document
and so forth accumulated and constituted in a server equipment
to a remote terminal unit and receiving and displaying in the
terminal unit.

[0002]

[Prior Art]

Conventionally, as a data transmission system for transmitting data, such as graphic image, document and so forth accumulated and constituted in the server equipment to the remote terminal unit through a transmission path and receiving and displaying in the terminal unit, there is one disclosed in Japanese Patent Application Laid-Open No. 5-30370, for example and has a construction illustrated in Fig. 17. At first, data contents accumulated in a server equipment 2a is accessed by a terminal unit 1 as data names consisted of character strings. Then, user selects data with the data name as key for receiving associated data content, such as graphic image, document and so forth to display on the terminal unit 1.

[0003]

On the other hand, recently, owing to evolution of network technology and data browser software in the terminal unit, data on various kinds of server equipments are displayed or executed by browser software of various kinds of terminal units via various kinds of transmission paths, such as a system represented by WWW (World Wide Web).

[0004]

[Problem to be Solved by the Invention]

In such conventional data transmission system, data, such as graphic image, document and so forth accumulated and

constituted in the server equipment, have been produced under a condition to be transmitted through a relatively high speed transmission path. Accordingly, when it is transmitted through relatively low speed transmission path, such as telephone circuit, wide area radio communication and so forth, it takes quite long transmission period to encounter a problem in that it cannot be displayed on the terminal unit in a practical period in response to a demand from the user.

[0005]

On the other hand, data, such as graphic image, document and so forth accumulated and constituted in the server equipment, have been produced under a condition to be transmitted through a relatively high speed transmission path. Accordingly, in the terminal equipment having relatively low speed processing capacity, such as portable terminal or the like, huge period it frequently take quite long period for display to encounter a problem in that it cannot be displayed on the terminal unit in a practical period in response to a demand from the user.

[0006]

The present invention has been worked out for solving the problem set forth above and particularly, has an object to obtain a data transmission system which can use portable terminal having only relatively low speed processing performance as a terminal equipment. Another object is to

provide a data transmission system which can use relatively low speed telephone circuit or wide area radio communication as a transmission path.

[0007]

5 [Means for Solving the Problem]

In a data transmission system, according to the present invention, transmitting data, such as graphic image, document and so forth accumulated and constructed in a server equipment via a transmission path to a terminal unit and receiving and
10 displaying in the terminal unit, said server equipment comprises a communication control device for performing communication with said terminal unit using the transmission path, a user and terminal management device managing the terminal unit or user in communication, a data content accumulating portion
15 accumulating data to be displayed on the side of terminal unit, a data name accumulating portion for accumulating data name necessary for selecting and taking out the data content, a data management device for managing association between data content and data name, and a data size converting device converting
20 taken out data into a designated data size, said terminal unit comprises a communication control device for performing communication with said server equipment using the transmission path, a data name selecting device for enabling user to select data content for displaying and executing, and a data content

displaying device displaying the data content of the data name
selected by the data name selecting device, said server equipment
transmitting to the terminal unit after conversion of quality
of data content and data size adapting to a transmission speed
5 of the transmission path in the server equipment.

[0008]

A relatively low speed transmission path, such as a
telephone circuit, radio communication or the like is used as
the transmission path.

10 [0009]

On the other hand, said server equipment has a data format
converting device further converting the taken out data into
a designated data format, and a terminal unit only having
relatively low speed processing performance, such as portable
15 terminal or the like is used as said terminal unit.

[0010]

The server equipment has a data name conversion device
enabling selection of data name from the terminal unit by
generating new data name by adding a particular identification
20 information to the data name, upon demanding with the new data
name from said terminal unit, the data content is transmitted
to the terminal unit without converting the data quality, data
size or data format.

[0011]

Furthermore, said server equipment has a user setting information management device capable of setting data size and data format per user or terminal unit and a user setting information accumulating portion accumulating setting information, for enabling display at a plurality of terminal units having different transmission speed or processing speed.
[0012]

Furthermore, the terminal unit has a data name selecting device enabling user to select the data content for displaying and executing, and the server equipment transmits to the terminal unit after conversion of quality of data content and data size adapting to a transmission speed of the transmission path in the server equipment.

A data transmission system transmitting data, such as graphic image, document and so forth accumulated and constructed in a server equipment via a transmission path and a relay unit to a terminal unit and receiving and displaying in the terminal unit, said server equipment comprises a communication control device for performing communication with said terminal unit using the transmission path, a user and terminal management device managing the terminal unit or user in communication, a data content accumulating portion accumulating data to be displayed on the side of terminal unit, a data name accumulating portion for accumulating data name necessary for selecting and

taking out the data content, a data management device for managing association between data content and data name, said relay unit comprises a communication control device for performing communication with both of said server equipment and said terminal unit using the transmission path, a data size converting device converting taken out data into a designated data size, a data format converting device converting taken out data into a designated data format, a user setting information management device capable of setting data size and data format per user or the terminal unit, and a user setting information accumulating portion accumulating set information, said terminal unit comprises a communication control device for performing communication with said server equipment using the transmission path, a data name selecting device for enabling user to select data content for displaying and executing, and a data content displaying device displaying the data content of the data name selected by the data name selecting device, said relay unit and said server equipment are connected with a relatively high speed transmission path and said relay unit transmitting to the terminal unit after conversion of quality of data content transmitted from said server equipment and data size adapting to a transmission speed of the transmission path in the server equipment.

[0015]

A plurality of server equipments are connected to the relay unit via a relatively high speed transmission path.

[0016]

A relatively low speed transmission path, such as a telephone circuit, radio communication or the like is used as the transmission path.

[0017]

[Mode of Implementation of the Invention]

First Embodiment: Fig. 1 is an illustration showing a construction of the first embodiment of a data transmission system. In the drawings, 1 denotes a terminal unit, 2 denotes a server equipment, and 3 denotes a relatively low speed transmission path, such as telephone circuit, wide area radio communication and so forth connecting between the terminal unit 1 and the server equipment 2. The terminal unit 1 has a communication control device 4 for performing communication using the transmission path 3 and a data browsing portion 5. The data browsing portion 5 has a data name selecting device 6 which enables the user to select data content for displaying and executing and a data content display device 7 displaying data content of data name selected by the data name selecting device 6. The server equipment 2 has a communication control device 8 for performing communication using the transmission path 3, a user, terminal management device 9 for managing terminal

unit or user in communication, a data content accumulating
portion 10 accumulating data to be displayed on the side of
the terminal unit 1, a data name accumulating portion 11
accumulating data name necessary for selecting and taking out
5 the data content, a data management device 12 managing
association between the data content and data name, a data
converting portion 13, a user setting information managing
device 14 and a user setting information accumulating portion
15. The data converting portion 13 has a data size converting
10 device 16, a size conversion table 17, a data format conversion
device 18, a format conversion table 19, a data name conversion
device 20 and a data name conversion table 21. The data size
conversion device 16 converts the size of data content with
reference to the size conversion table 17 for the data content.
15 The data format conversion device 18 converts the data format
of the data content with reference to the format conversion
table 19 for the data content. The data name conversion device
20 make reference to the data name conversion table 21 for the
data name from the data management device 12 to newly generate
data name with identifier, and checks whether the identifier
is contained in the data name received from the communication
control device 8, for branching to effect conversion by the
data size converting device 16 and the data format conversion
device 18 for data content of the data name when identifier

is not contained, for example. The user setting information management device 14 obtains who is transmission counterpart of data processed by the data converting portion 13 from user information output from the user and terminal management device 5 9 in response to a demand from the data converting portion 13 for determining the size conversion table 17, the format conversion table 19 and the data name conversion table 21 from the user information and the information registered in the user setting information accumulating portion 15.

10 [0018]

Fig. 2 shows an example of screen displaying data content which user selects data name from an internet browser software active as both of data name selecting device 6 and the data content displaying device 7 in Fig. 1. In Fig. 2, there is 15 shown an example of display screen loading and displaying associated data by the user inputting the data name through the keyboard or the like or selecting data name by the mouse or the like. At this time, the data converting device 16 of the server equipment 2 performs operation flow shown in Fig. 20 3. On the other hand, at this time, the size conversion table 17 is as shown in Fig. 5.

[0019]

Operation flow of the first embodiment of the data transmission system will be discussed with reference to Fig.

3. When user performs input operation in the data name selecting device 6 of the terminal unit 1, check is performed whether the data name is selected or input by the operation at step S31. If not data name input, the process returns to step S31 to wait for input. If the data name is selected, at step S32, the data management device 12 of the server equipment 2 retrieves the data content based on the data name transmitted from the terminal unit 1. Next, the data size conversion device 16 receiving the data content, converts the data content in a system adapted to the size conversion table 17 at step S33 to transmit to demanding terminal unit 1. The terminal unit 1 receiving the transmitted data content, displays the data content in the data content display device 7 at step S34.

[0020]

15 Next, discussion will be given for operation of the data size converting device 16 in the first embodiment with reference to Fig. 4. In the data size conversion device 16, at step S41, the data content received from the data management device 12 is checked whether the data content is graphic image data. If the graphic image data, the size conversion table 17 is read at step S42. At step S43, conversion process is performed adapting to the size conversion table 17. At step S44, When the result satisfies the condition of the size conversion table 17, the process returns to step S43. Otherwise, the result

is transferred to the communication control device 8 and process goes end. At step S41, if the data content is not the graphic image data, process directly goes end. For example, when the size conversion table is as shown in Fig. 5, 10 Kbyte graphic
5 image file of GIF format is, at first, converted into a file of Jpeg format of 10% quality in comparison with the original image. If the file size of this is greater than or equal to 5 Kbyte, conversion is again performed into Jpeg of 10% quality in comparison with the converted file. Finally, at step 43,
10 the data content is transmitted to the communication control device 8.

[0021]

It should be noted that the size conversion table 17 may be registered and accumulated as an external file in the server
15 equipment 2, for example so that the user may freely define and vary.

[0022]

Second Embodiment: Next, discussion will be given for the second embodiment. At this time, the data format conversion
20 device 18 of the server equipment 2 performs operation flow shown in Fig. 6. On the other hand, the format conversion table 19 at this time becomes as shown in Fig. 8.

[0023]

Discussion will be given for operation flow of the second

embodiment of the data transmission system with reference to Fig. 6. When user performs input operation in the data name selection device 6 of the terminal device 1, at step S61, check is performed whether the operation selects or inputs the data name or not. If data name cannot be input, process returned to step S61 time identifier wait for input. When data name is selected, at step S62, the data management device 12 of the server equipment 2 retrieves the data content on the basis of the data name transmitted from the terminal unit 1. Next, the data format conversion device 18 receiving the data content converts the data content in the system adapted to the format conversion table 19 at step S63 to transmit to the demanding terminal unit 1. The terminal unit 1 receiving the transmitted data content displays the data content in the data content display device 7 at step S64.

[0024]

Next, operation of the data format conversion device 18 in the second embodiment will be discussed with reference to Fig. 7. In the data format conversion device 18, at step S71, check is performed whether the data content received from the data management device 12. If the conversion objective format, the format conversion table 19 is read out at step S72, and at step S73, conversion process is performed adapting to format conversion table 19. The result is transferred to the

communication control device 8 and then process goes end. At
step S71, if not the conversion objective format, process
directly goes end. For example, when the format conversion
table 19 is as shown in Fig. 8, data content of CAD drawing
5 format is converted into image format data and is transmitted
to the communication control device 8.

[0025]

It should be noted that the format conversion table may
also register and accumulate as external file in the server
10 equipment 2, for example, so that the user may freely define
and vary.

[0026]

Third Embodiment: Next, third embodiment will be discussed.
At this time, data transmission system is operated according
15 to operation flow shown in Fig. 9.

[0027]

Operation flow of the third embodiment of the data
transmission system will be discussed with reference to Fig.
9. When user performs input operation in the data name selection
20 device 6 of the terminal unit 1, at step S91, check is made
whether the operation makes selection or input of data name
or not. If not the data name input, process returns to step
S91 to again wait for input. When the data name is selected,
at step S92, the data management device 12 of the server 2

retrieves the data content based on the data name transmitted from the terminal unit 1. Next, the data format conversion device 18 receiving the data content, at step S93, data content is converted in the system adapted to the format conversion table 19 to transmit to the data size conversion device 16. The data conversion device 16 receiving the data content converts the data content in the system adapted to the size conversion table 17 at step S94 to transmit the demanding terminal unit 1 via the communication control device 8. The terminal unit 1 receiving the transmitted data content displays the data content in the data content display device 7 at step S95.

[0028]

Fourth Embodiment: Next, discussion will be given for the fourth embodiment. Fig. 12 shows an example of display screen showing a list of data names input by the user through an internet browser software serving as both of the data name selecting device and the data content displaying device 7. Then, Fig. 12 also displays a list of data name newly generated by the data name conversion device 20 in addition to the data name actually accumulated in the data name accumulating portion 11 of the server equipment 2. At this time, the data transmission system performs operation shown in operation flow shown in Fig. 10. On the other hand, from data displayed in the list, user inputs the data name through the keyboard or the like or selects

the data name by the mouse or the like to load the associated data content to display. At this time, the data transmission system performs operation shown in operation flow shown in Fig. 11.

5 [0029]

The operation flow of the fourth embodiment of the data transmission system will be discussed with reference to Fig. 10. When the terminal unit 1 performs input operation for demanding to the server equipment 2 for displaying data name of data accumulated in the server equipment 2 in a form of list in the data name selection device 6, data management device 12 performs retrieval of data name at step S101, to transmit the result to the data name converting device 20. The data name converting device 20 receiving the data name adds identifier adapting to the data name conversion table 21 to the data name at step S102 to generate as new data name. At step S103, the data name conversion device 20 transmits data name including data name before addition and new data name to the terminal unit 1 via the communication control device 8 to display on the data name selection device 6 of the terminal unit 1. For example, in the condition of the data conversion table as shown in Fig. 13, if the data name conversion device 20 receives the data name as "/../abcde.xyz", the data name "/../-FLAG-/abcde.xyz" is newly generated to transmit both of

"/../abcde.xyz" and "/../-FLAG-/abcde.xyz" to the terminal unit.

[0030]

Next, operation flow of the fourth embodiment of data transmission system will be discussed with reference to Fig. 5 11. When the user performs input operation is performed in the data name selection device 6 of the terminal unit 1, check is performed whether the data name is selected or input by the operation set forth above at step S111. If not the data name 10 input, the process returns to step S111 to wait for input. When the data name is selected, check is performed whether identifier is added to the data name by the data name converting device 20 of the server equipment 2 at step S112. If the identifier is added, at step S113, the conversion flag as internal parameter 15 is set to 0 and the identifier is erased from the data name (step S114). If the identifier is not added, at step S115, the conversion flag is set to 1. Next, at step S116, the data content is demanded to the data management device 12 depending upon the data name. At step S117, the data management device 20 12 retrieves data content on the basis of the data name transmitted from the terminal unit 1. Next, the data name converting device 12 receiving the data content, checks the conversion flag set precedingly. If the conversion flag is 1, the data content is converted by the data format conversion

device 18 and the data size conversion device 16 (step S119).
When the conversion flag is 0, the process is advanced to step
S120 without taking any action. At step S120, the data name
conversion device 20 performs transmission to the demanding
5 terminal unit 1 via the communication control device 8. The
terminal unit 1 receiving the transmitted data content displays
the data content in the data content display device 7.

[0031]

Fifth Embodiment: Next, discussion will be given for the fifth
10 embodiment. In the fifth embodiment, in the foregoing third
embodiment, the size conversion table 17, the format conversion
table 19 and the data name conversion table 21 of the data
conversion table 13 in Fig. 1, are provided in plural respectively
for switching the tables depending upon information from the
15 user setting information accumulating portion 15 for enabling
conversion adapting for each user. For example, when the user
setting information accumulating portion 15 is as shown in Fig.
14 and when demand is given by user A, a conversion table S-3
is used as the size conversion table 17, a conversion table
20 F-5 is used as the format conversion table 19 and a conversion
table N-2 is used as the data name conversion table 21.

[0032]

It should be noted that, in the fifth embodiment, while
the user setting information accumulating portion 15 registers

the username, other condition, such as terminal name for enabling setting per terminal or speed rank of the transmission path for enabling setting per transmission path connected in place of the user name, may be set. On the other hand, by setting
5 a plurality of conditions simultaneously, it becomes possible to set depending upon the user, terminal, transmission path.
[0033]

Sixth Embodiment: Next, discussion will be given for the sixth embodiment. Fig. 15 is an illustration showing a construction
10 of the sixth embodiment of the data transmission system according to the present invention. In Fig. 15, the same reference numerals to the first embodiment shown in Fig. 1 will identify the same or corresponding portions. The reference numeral 2a denotes a server equipment. The server equipment 2a has the
15 communication control device 8, the user and terminal management device 9, the data content accumulating device 10, the data name accumulating portion 11 and the data management device 12 but does not have the data converting portion 13, the user setting information management device 14 and the user setting
20 information accumulating portion 15. The reference numeral 22 denotes a relay unit. The relay unit 22 and the server equipment 2a are connected to relatively high speed transmission path 23.

[0034]

Even in this sixth embodiment, as the transmission path 3 connecting the terminal unit 1 and the relay unit 22, the relatively low speed transmission path, such as telephone circuit or wide area radio communication are used. On the other hand, as the terminal equipment, the terminal unit only having relatively low speed processing performance, such as portable terminal or the like, can be used.

[0035]

Seventh Embodiment: Next, seventh embodiment will be discussed. Fig. 16 is an illustration showing a construction of the seventh embodiment of the data transmission system according to the present invention. In Fig. 16, the same reference numerals as the sixth embodiment shown in Fig. 15 identify the same or similar portion. In the sixth embodiment, it takes a construction, in which one relay unit 22 is provided for one server equipment 2a, whereas in the seventh embodiment shown in Fig. 16, one relay unit 22 is provided for a plurality of server equipments 2a to 2c.

[0036]

Even in the seventh embodiment, substantially similar function and effect as the sixth embodiment can be attained as a matter of course.

[0037]

[Effect of the Invention]

Since the present invention is constructed as set forth above, the following effects can be achieved.

[0038]

From the server equipment accumulating data, such as the
5 graphic image, the document and so forth which can be transmitted
through relatively high speed transmission path, such as LAN
or the like, data can be displayed on the terminal unit in
practical quality and time even using the relatively low speed
transmission path, such as telephone circuit, radio
10 communication and so forth.

[0039]

On the other hand, even when the terminal unit only having
relatively low speed processing performance, such as portable
terminal, data can be displayed at practical quality and time.

15 [0040]

On the other hand, data before modification can be demanded
without modifying the equipment construction of the terminal
unit.

[BRIEF DESCRIPTION OF THE DRAWINGS]

20 [Fig. 1]

An illustration of a construction showing the first
embodiment of a data transmission system according to the present
invention;

[Fig. 2]

An example of a display screen displaying a data content
in a data browsing portion of a terminal unit;

[Fig. 3]

An operation flow of the first embodiment of the data
5 transmission system;

[Fig. 4]

An operation flow of the first embodiment of the data
transmission system;

[Fig. 5]

10 An example of expression of information registered and
accumulated in a size conversion table in the first embodiment;

[Fig. 6]

An operation flow of the second embodiment of the data
transmission system;

15 [Fig. 7]

An operation flow of the second embodiment of the data
transmission system;

[Fig. 8]

An example of expression of information registered and
20 accumulated in a format conversion table in the second
embodiment;

[Fig. 9]

An operation flow of the third embodiment of the data
transmission system;

[Fig. 10]

An operation flow of the fourth embodiment of the data transmission system (list display);

[Fig. 11]

5 An operation flow of the second embodiment of the data transmission system (data content display);

[Fig. 12]

An example of display screen displaying data content in a data browsing portion in the terminal unit of the fourth
10 embodiment;

[Fig. 13]

An example of expression of information registered and accumulated in a data conversion table in the fourth embodiment;

[Fig. 14]

15 An example of expression of information registered and accumulated in a user setting information accumulating portion in the fifth embodiment;

[Fig. 15]

An illustration of a construction showing the sixth
20 embodiment of the data transmission system;

[Fig. 16]

An illustration of a construction showing the seventh embodiment of the data transmission system; and

[Fig. 17]

An illustration of a construction showing the conventional data transmission system.

DRAWINGS

Fig. 1

- 6 DATA NAME SELECTING DEVICE
- 7 DATA CONTENT DISPLAY DEVICE
- 5 5 DATA BROWSING PORTION
- 4 COMMUNICATION CONTROL DEVICE
- 1 TERMINAL UNIT
- 3 RELATIVELY LOW SPEED TRANSMISSION PATH
- 8 COMMUNICATION CONTROL DEVICE
- 10 2 SERVER EQUIPMENT
- 9 USER AND TERMINAL MANAGEMENT DEVICE
- 14 USER SETTING INFORMATION MANAGEMENT DEVICE
- 15 USER SETTING INFORMATION ACCUMULATING PORTION
- 17 SIZE CONVERSION TABLE
- 15 16 DATA SIZE CONVERSION DEVICE
- 19 FORMAT CONVERSION TABLE
- 18 DATA FORMAT CONVERSION DEVICE
- 21 DATA NAME CONVERSION TABLE
- 20 DATA NAME CONVERSION DEVICE
- 20 13 DATA CONVERTING PORTION
- 12 DATA MANAGEMENT DEVICE
- 11 DATA NAME ACCUMULATING PORTION
- 10 DATA CONTENT ACCUMULATING PORTION

Fig. 2

(1) CLICK BY MOUSE OR THE LIKE

Fig. 3

5 START

S31 DATA NAME SELECTED?

TERMINAL UNIT

S32 RETRIEVE DATA CONTENT FROM DATA NAME

DATA MANAGEMENT DEVICE

10 S33 CONVERT DATA CONTENT DEPENDING UPON SETTING CONDITION

DATA SIZE CONVERSION DEVICE

S34 EXECUTE ANDS DISPLAY DATA CONTENT

TERMINAL UNIT

END

15

Fig. 4

START

S41 GRAPHIC IMAGE DATA?

S42 READ SIZE CONVERSION TABLE

20 S43 CONVERSION PROCESS

S44 CONVERTING CONDITION SATISFIED?

END

Fig. 5

左欄上から(left column from the top)

OBJECTIVE CONDITION

Jpeg FILE OF THE SIZE GREATER THAN OR EQUAL TO 5 Kbyte

GIF FILE OF THE SIZE GREATER THAN OR EQUAL TO 5 Kbyte

5 GIF ANIMATION FILE OF THE SIZE GREATER THAN OR EQUAL TO 7 Kbyte

BIT MAP DATA

右欄上から(right column from the top)
CONVERSION SCHEME

CONVERT INTO Jpeg FILE OF 10% QUALITY

10 CONVERT INTO Jpeg FILE OF 10% QUALITY

TAKE OUT ONLY FIRST GIF IMAGE

CONVERT INTO Jpeg FILE

Fig. 6

15 START

S61 DATA NAME SELECTED?

TERMINAL UNIT

S62 RETRIEVE DATA CONTENT FROM DATA NAME

DATA MANAGEMENT DEVICE

20 S63 CONVERT DATA CONTENT DEPENDING UPON SETTING CONDITION

DATA FORMAT CONVERSION DEVICE

S64 EXECUTE ANDS DISPLAY DATA CONTENT

TERMINAL UNIT

END

Fig. 7

START

S71 CONVERSION OBJECTIVE FORMAT?

5 S72 READ FORMAT CONVERSION TABLE

S73 CONVERSION PROCESS

END

Fig. 8

10 ~~左欄上から~~ (left column from the top)

OBJECTIVE CONDITION

DOCUMENT WITH FORMAT

CAD DRAWING

MOVING PICTURE DATA

15

~~右欄上から~~ (right column from the top)

TEXT DATA WITHOUT FORMAT

IMAGE DATA

MAKE IMAGE DATA WITH TAKING OUT ONLY FIRST IMAGE

20

Fig. 9

START

S91 DATA NAME SELECTED?

TERMINAL UNIT

S92 RETRIEVE DATA CONTENT FROM DATA NAME
DATA MANAGEMENT DEVICE

S93 CONVERT DATA CONTENT DEPENDING UPON SETTING CONDITION
DATA FORMAT CONVERSION DEVICE

5 S94 CONVERT DATA CONTENT DEPENDING UPON SETTING CONDITION
DATA SIZE CONVERSION DEVICE

S95 EXECUTE AND DISPLAY DATA CONTENT
TERMINAL UNIT

END

10

Fig. 10

START

S101 DATA NAME RETRIEVAL RESPONSIVE TO DEMAND FROM TERMINAL
UNIT

15 S102 GENERATE NEW DATA NAME BY PERFORMING DATA NAME + IDENTIFIER

S103 TRANSMIT ORIGINAL DATA NAME AND NEW DATA NAME

Fig. 11

START

20 S111 DATA NAME SELECTED?

S112 IDENTIFIER ADDED?

S113 SET CONVERSION FLAG 0

S114 ERASE IDENTIFIER FROM DATA NAME

S115 SET CONVERSION FLAG 1

S116 DEMAND DATA CONTENT TO DATA MANAGEMENT DEVICE
S117 OBTAIN DATA CONTENT
S118 CONVERSION FLAG 1?
S119 CONVERT DATA BY DATA SIZE CONVERTING DEVICE AND DATA FORMAT
5 CONVERSION DEVICE
S120 TRANSMIT DATA CONTENT TO TERMINAL UNIT
END

Fig. 12

10 (1) CLICK BY MOUSE OR THE LIKE

Fig. 13

(1) OBJECTIVE DATA NAME PATTERN
(2) CONVERSION SYSTEM

15

Fig. 14

~~1-15~~ (from the top)

OBJECTIVE USER NAME = A

TABLE	EVENT
20 SIZE CONVERSION	CONVERSION TABLE S-3
FORMAT CONVERSION	CONVERSION TABLE F-5
DATA NAME CONVERSION	CONVERSION TABLE N-2

OBJECTIVE USER NAME = B

TABLE	EVENT
SIZE CONVERSION	CONVERSION TABLE S-2
FORMAT CONVERSION	CONVERSION TABLE F-1
DATA NAME CONVERSION	CONVERSION TABLE N-4

5

OBJECTIVE USER NAME = C

TABLE	EVENT
SIZE CONVERSION	CONVERSION TABLE S-1
FORMAT CONVERSION	CONVERSION TABLE F-1
10 DATA NAME CONVERSION	CONVERSION TABLE N-1

Fig. 15

Fig. 1

6	DATA NAME SELECTING DEVICE
15 7	DATA CONTENT DISPLAY DEVICE
5	DATA BROWSING PORTION
4	COMMUNICATION CONTROL DEVICE
1	TERMINAL UNIT
3	RELATIVELY LOW SPEED TRANSMISSION PATH
20 11	DATA NAME ACCUMULATING PORTION
10	DATA CONTENT ACCUMULATING PORTION
12	DATA MANAGEMENT DEVICE 12
8	COMMUNICATION CONTROL DEVICE
9	USER AND TERMINAL MANAGEMENT DEVICE

- 2a SERVER EQUIPMENT
- 24 RELATIVELY HIGH SPEED TRANSMISSION PATH
- 23 COMMUNICATION CONTROL DEVICE 23
- 22 RELAY UNIT
- 5 9 USER AND TERMINAL MANAGEMENT DEVICE
- 14 USER SETTING INFORMATION MANAGEMENT DEVICE
- 15 USER SETTING INFORMATION ACCUMULATING PORTION
- 17 SIZE CONVERSION TABLE
- 16 DATA SIZE CONVERSION DEVICE
- 10 19 FORMAT CONVERSION TABLE
- 18 DATA FORMAT CONVERSION DEVICE
- 21 DATA NAME CONVERSION TABLE
- 20 DATA NAME CONVERSION DEVICE
- 13 DATA CONVERTING PORTION
- 15

Fig. 16

- 6 DATA NAME SELECTING DEVICE
- 7 DATA CONTENT DISPLAY DEVICE
- 5 DATA BROWSING PORTION
- 20 4 COMMUNICATION CONTROL DEVICE
- 1 TERMINAL UNIT
- 2a SERVER EQUIPMENT
- 2b SERVER EQUIPMENT
- 2c SERVER EQUIPMENT

- 24 RELATIVELY HIGH SPEED TRANSMISSION PATH
- 23 COMMUNICATION CONTROL DEVICE
- 9 USER AND TERMINAL MANAGEMENT DEVICE
- 14 USER SETTING INFORMATION MANAGEMENT DEVICE
- 5 15 USER SETTING INFORMATION ACCUMULATING PORTION
- 17 SIZE CONVERSION TABLE
- 16 DATA SIZE CONVERSION DEVICE
- 19 FORMAT CONVERSION TABLE
- 18 DATA FORMAT CONVERSION DEVICE
- 10 21 DATA NAME CONVERSION TABLE
- 20 DATA NAME CONVERSION DEVICE
- 13 DATA CONVERTING PORTION

Fig. 17

- 15 6 DATA NAME SELECTING DEVICE
- 7 DATA CONTENT DISPLAY DEVICE
- 5 DATA BROWSING PORTION
- 4 COMMUNICATION CONTROL DEVICE
- 1 TERMINAL UNIT
- 20 24 RELATIVELY HIGH SPEED TRANSMISSION PATH
- 8 COMMUNICATION CONTROL DEVICE
- 2a SERVER EQUIPMENT
- 9 USER AND TERMINAL MANAGEMENT DEVICE
- 12 DATA MANAGEMENT DEVICE

11 DATA NAME ACCUMULATING PORTION

10 DATA CONTENT ACCUMULATING PORTION

5

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